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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/264,719	03/09/1999	TETSUNOBU KOCHI	35.C13389	3618

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NEW YORK, NY 10112

EXAMINER

WU, DOROTHY

ART UNIT	PAPER NUMBER
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2615

DATE MAILED: 07/27/2004

17

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/264,719

Applicant(s)

KOCHI ET AL.

Examiner

Dorothy Wu

Art Unit

2615

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☒ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 8 and 9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 8 and 9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____.  |

## DETAILED ACTION

### *Response to Arguments*

1. Applicant's arguments with respect to claims 8 and 9 have been considered but are moot in view of the new ground(s) of rejection.

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over the admitted prior art in view of Williams et al, U.S. Patent 3,845,295.

Regarding claim 8, the admitted prior art teaches a solid state image pickup element (page 5, line 10) in one-chip formation, which reads on formation on a single semiconductor substrate (page 5, lines 14-15), comprising a pixel including a photoelectric conversion element which includes an accumulation area (photodiode area) where signal charge generated by photoelectric conversion is accumulated (page 5, line 27-page 6, line 1), a transfer switch (transfer gate 701) which transfers the signal charge accumulated in said accumulation area (page 5, line 24-page 6, line 1), a floating diffusion portion (floating diffusion area 711) which receives the signal charge through said

Art Unit: 2615

transfer switch (page 5, line 27-page 6, line 1), and a reset switch (reset gate 712) which resets an electric potential of said floating diffusion portion (floating diffusion area 711) (page 6, lines 6-9).

The admitted prior art teaches a first terminal (RST 712) and first wiring (wire that supplies control to RST 712) which applies a voltage at said first terminal (RST 712) to said reset switch (reset transistor comprising RST 712 + source and drain) so that said reset switch (reset transistor comprising RST 712 + source and drain) is controlled according to the applied voltage at said first terminal (RST 712) and another voltage that is internally supplied for the sensor (VDD applied to region 713) (Paper No. 10, page 3, line 18-page 4, line 4; Figs. 1-4). As a transistor requires applied voltages at its source, drain, and gate to function, the voltages present at said source, drain, and gate control the transistor. The admitted prior art also teaches a second terminal (TX 701) and second wiring (wire that supplies control to TX 701) which applies a voltage at said second terminal (TX 701) to said transfer switch (transfer transistor comprising TX 701 + source and drain) so that said transfer switch (transfer transistor comprising TX 701 + source and drain) is controlled according to the applied voltage at said second terminal (TX 701) and another voltage that is internally supplied for the sensor (VDD applied to region 711, held at same voltage as region 713) (Paper No. 10, page 4, lines 4-6; Figs. 1-4). As a transistor requires applied voltages at its source, drain, and gate to function, the voltages present at said source, drain, and gate control the transistor.

Art Unit: 2615

The admitted prior art does not teach that the first and second terminals are connectable externally. Williams teaches a first terminal and a second terminal (terminals that may be switchably connected to  $-3V$  or  $-25V$ , and  $-1V$  or  $-4V$ ) (Fig. 1). The power sources supplying  $-3V$ ,  $-25V$ ,  $-1V$ , and  $-4V$  are not locally located, which reads on the terminals being connectable externally. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the sensing apparatus of the admitted prior art with the practice of controlling reset and transfer switches according to voltages supplied at externally connectable terminals taught by Williams to make an image sensing apparatus that transfers charge from the photodiodes or resets the photodiodes using multiple voltage sources and control means for selecting which voltage source shall be applied to the reset or transfer switch. One of ordinary skill would have been motivated to make such a modification to provide a wider range of control for the transfer or depletion of charge from a region when the image sensor is reading out or resetting pixels.

Regarding claim 9, Williams et al teaches a first voltage ( $-25V$ ) supplied to the first terminal (node at gate electrode 22) and a second voltage smaller than the first voltage ( $-1V$ ) supplied to said second terminal (node at gate electrode 16) (Figs. 2-5). The voltage potential setting circuit which generates a plurality of different electric power voltages is inherently taught.

Art Unit: 2615

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

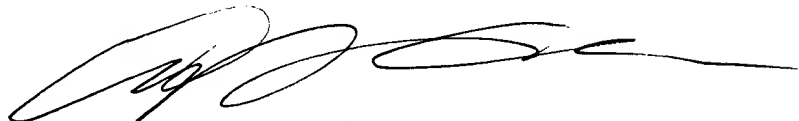
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dorothy Wu whose telephone number is 703-305-8412. The examiner can normally be reached on Monday-Friday, 9:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Christensen can be reached on 703-308-9644. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2615

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*Dorothy Wu*  
DW  
July 23, 2004



ANDREW CHRISTENSEN  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600